Amendments To The Claims:

Please amend the claims as shown.

1 – 18 (canceled)

19. (currently amended) A method for filling a material separation in an opening along ~~at~~ a surface of a substrate or a layer, comprising:

filling the material separation in the opening by introducing further material with an electrolytic deposition process while inducing mechanical oscillations in a region of the substrate adjoining the material separation by positioning ~~incorporating~~ an eddy-current probe to surround but not cover the opening and to provide an interaction volume extending into the opening about the material separation~~positioned to generate mechanical excitations in the region around the material separation~~ wherein the frequency of the eddy-current probe is varied during the deposition process so that initially the interaction volume extends a maximum penetration depth into the opening while a portion of the opening at a maximum depth from the surface is filled and, as the opening is filled, the penetration depth of the interaction volume is reduced by increasing the frequency of the eddy-current probe.

20. (previously presented) The method as claimed in claim 19, wherein the substrate or the layer is electrically connected through an electrolyte to an electrode and a variable current is provided between the substrate or the layer and the electrode.

21. (previously presented) The method as claimed in claim 20, wherein the current is pulsed.

22. (currently amended) The method as claimed in claim 20, wherein the further material is an alloy comprising at least ~~includes~~ first and second constituents and the current is varied in a repetitive manner so that deposition conditions are alternately more optimum for the first constituent and then more optimum for the second constituent in order to facilitate mixing constituents of the alloy.

23. (previously presented) The method as claimed in claim 20, wherein at least one ultrasound probe is operated in the electrolyte.

24-25. (canceled)

26. (previously presented) The method as claimed in claim 20, wherein the further material includes material of a same type as the material of the substrate or the layer.

27. (previously presented) The method as claimed in claim 20, wherein the further material is the same as the material of the substrate or the layer.

28. (previously presented) The method as claimed in claim 19, wherein the material separation is widened in a first method step.

29. (previously presented) The method as claimed in claim 19, wherein a current/voltage pulse is used for the electrolytic deposition, with both positive and negative current/voltage pulses being used.

30. (previously presented) The method as claimed in claim 19, wherein a plurality of repeated current/voltage pulses are combined in a sequence and used for the electrolytic deposition, the sequence of at least two different blocks being used, with a block comprising at least one current pulse.

31. (previously presented) The method as claimed in claim 30, wherein a block is determined by a number of current pulses, pulse duration, interpulse period, current intensity, and pulse shape.

32. (previously presented) The method as claimed in claim 30, characterized in that a block is in each case matched to a constituent of an alloy, in order to boost the deposition of this constituent of the alloy.

33. (previously presented) The method as claimed in claim 19, wherein the further material includes constituents of an alloy of the type MCrAlY resulting in deposition of the alloy wherein M is an element selected from the group consisting of iron, cobalt and nickel.

34. (previously presented) The method as claimed in claim 30, wherein gradients are produced in the material composition within the material separation.

35. (previously presented) The method as claimed in claim 21, wherein a base current is superimposed on the current pulses and/or the interpulse periods.

36-37. (canceled)

38. (previously presented) The method of claim 32 wherein the varying of current in a repetitive manner includes providing current pulses of varied duration and magnitude.

39. (previously presented) The method of claim 38 wherein a base current is superimposed on the current pulses and during periods between pulses.